

Appl. No. 10/604,599
Amtd. dated March 01, 2005
Reply to Office action of December 14, 2004

AMENDMENTS TO THE SPECIFICATION

In paragraph [0036]:

5 Fig. 4 shows a first embodiment of a color conversion apparatus 30 of the present invention. The color conversion apparatus 30 converts a first color having red, green, and blue values (R, G, B) in a first color space to a second color having second red, green, and blue values (R', G', B') in a second color space. The color conversion apparatus 30 includes a gamma correction circuit 32, a g1 lookup table 34, a b1 lookup table 36, an r2 10 lookup table 38, a b2 lookup table 40, an r3 lookup table 42, a g3 lookup table 44, a first adder 46, a second adder 48, and a third adder 50. Each of the lookup tables 34, 36, 38, 40, 42, 44 is implemented with a 32-byte memory as shown in Fig. 3. The first red value R is connected to the gamma correction circuit 32, the g1—r2 lookup table 34—38, and the b1—r3 15 lookup table 36—42. The first green value G is connected to the gamma correction circuit 32, the r2—g1 lookup table 34, and the b2—g3 lookup table 44. Finally the first blue value B is connected to the gamma correction circuit, the r3—b1 lookup table 36, and the g3—b2 20 lookup table 40. The output of the g1 lookup table 34, which is the result of the multiplication of G*g1; the output of the b1 lookup table 36, which is the result of the multiplication of B*b1; and the gamma corrected R-value r1-gamma are added together by the first adder 46. The output of the first adder 46 is the second red value R'. The second adder 48 adds together the output of the r2 lookup table 38, which is the result of the multiplication of R*r2; the output of the b2 lookup table 40, which is the result of the multiplication of B*b2; and the gamma corrected G-value g2-gamma to produce the 25 second green value G'. Similarly, the third adder 50 adds together the output of the r3 lookup table 42, which is the result of the multiplication of R*r3; the output of the g3 lookup table 44, which is the result of the multiplication of G*g3; and the gamma corrected B-value b3-gamma to produce the second green value B'.

In paragraph [0037]:

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Fig.5 shows a second embodiment of a color conversion apparatus 51 of the present invention. The color conversion apparatus 51 converts a first color having red, green, and blue values (R, G, B) in a first color space to a second color having second red, green, and blue values (R', G', B') in a second color space. The color conversion apparatus 51 includes a g1 lookup table 52, a b1 lookup table 54, an r2 lookup table 56, a b2 lookup table 58, an r3 lookup table 60, a g3 lookup table 62, a first adder 64, a second adder 66, a third adder 68, and a gamma correction circuit 70. Each of the lookup tables 52, 54, 56, 58, 60, 62 is implemented with a 32-byte memory as shown in Fig.3. The first red value R is connected to the g1—r2 lookup table 52—56 and the b1—r3 lookup table 54—60. The first green value G is connected to the r2—g1 lookup table 56—52 and the b2—g3 lookup table 58—62. Finally the first blue value B is connected to the r3—b1 lookup table 60—54 and the g3—b2 lookup table 62—58. The output of the g1 lookup table 52, which is the result of the multiplication of $G \cdot g1$, and the output of the b1 lookup table 54, which is the result of the multiplication of $B \cdot b1$, are added together by the first adder 64. The second adder 66 adds together the output of the r2 lookup table 56, which is the result of the multiplication of $R \cdot r2$, and the output of the b2 lookup table 58, which is the result of the multiplication of $B \cdot b2$. Similarly, the third adder 68 adds together the output of the r3 lookup table 60, which is the result of the multiplication of $R \cdot r3$, and the output of the g3 lookup table 62, which is the result of the multiplication of $G \cdot g3$. The output of the first adder 64 (R'), the second adder 66 (G'), and the third adder 68 (B') are connected to the gamma correction circuit 70 and the output of the gamma correction circuit 70 is the second color value comprising the second red value R', the second green value G', and the second blue value B'.

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